

***PSEUDOTSUGA MENZIESII* - *TSUGA HETEROPHYLLA* /
MAHONIA NERVOSA / *POLYSTICHUM MUNITUM***

Douglas-fir - western hemlock / dwarf Oregongrape / sword fern

Abbreviated Name: PSME-TSHE/MANE/POMU

Synonym: *Pseudotsuga menziesii* - *Tsuga heterophylla* /
Berberis nervosa / *Polystichum munitum*

Sample size = 45 plots

DISTRIBUTION: This association occurs throughout most of the Puget Trough. May be absent or rare on the Kitsap Peninsula and in much of Mason County. Also occurs in adjacent ecoregions and in northwestern Oregon.

GLOBAL/STATE STATUS: G4S3. Natural-origin occurrences in the Puget Trough are rare due to historic logging. In adjacent ecoregions it has been less impacted by development and logging.

ID TIPS: Dwarf Oregongrape and sword fern usually co-dominate the understory. Dwarf Oregongrape provides >5% and sword fern >3% cover. Dwarf Oregongrape more abundant than the combination of lady-fern, spreading woodfern, threeleaf foamflower, deerfern, and salmonberry.

ENVIRONMENT: These sites are moderately moist and appear to be relatively nutrient-rich. A variety of topography and soils are represented. Aspect is more commonly toward the north. Parent materials can include residuum, glacial till and outwash, and colluvium, among others. Soil texture is variable: most frequent is gravelly loam, gravelly sandy loam, or silt loam.

Precipitation: 24-88 inches (mean 48)

Elevation: 90-1560 feet

Aspect/slope: various/ 0-91% (mean 31)

Slope position: mid, short, lower, plain, upper, bottom

Soil series: Ahl, Alderwood, andic xerochrepts, Baldhill, Barneston, Buckpeak, Cathcart, Centralia, Cinebar, Everett, Indianola, Kapowsin, Kitsap, Louella, Nati, Neilton, Olympic, Pickett, Prather, Roche, Shelton, Skipopa, Terbies, Tokul, Whatcom, Whidbey, Wilkeson, xerochrepts, Yelm

DISTURBANCE/SUCCESSION: Fire is the primary natural disturbance. Old-growth stands show evidence of past low- to moderate-severity fire (underburns). Hemlock and/or redcedar increase over time in absence of disturbance, Douglas-fir decreases. Young stands may have little hemlock or redcedar.

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Vegetation Composition Table (selected species):

Con = constancy, the percent of plots within which each species was found;

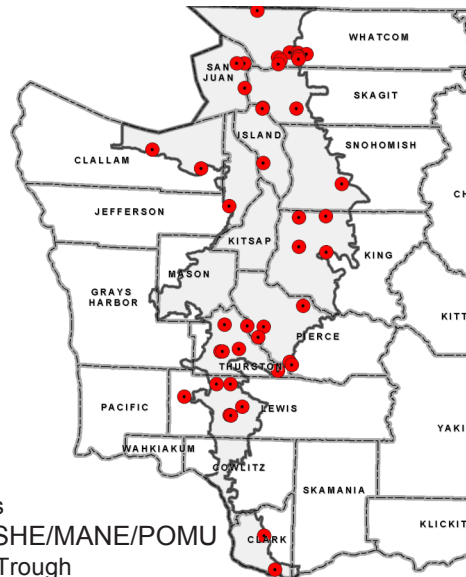
Cov = cover, the mean crown cover of the species in plots where it was found.

Trees	Kartesz 2003 Name	Con	Cov
Douglas-fir	Pseudotsuga menziesii var. menziesii	100	48
western hemlock	Tsuga heterophylla	87	38
western redcedar	Thuja plicata	82	35
bigleaf maple	Acer macrophyllum	60	19
grand fir	Abies grandis	22	7
Shrubs, Subshrubs			
dwarf Oregongrape	Mahonia nervosa	100	18
red huckleberry	Vaccinium parvifolium	80	3
trailing blackberry	Rubus ursinus var. macropetalus	78	1
salal	Gaultheria shallon	73	3
vine maple	Acer circinatum	49	15
beaked hazelnut	Corylus cornuta var. californica	42	5
baldhip rose	Rosa gymnocarpa	40	1
Graminoids			
Coast Range fescue	Festuca subuliflora	33	1
Forbs and Ferns			
sword fern	Polystichum munitum	100	23
sweet-scented bedstraw	Galium triflorum	62	2
western starflower	Trientalis borealis ssp. latifolia	62	2
bracken fern	Pteridium aquilinum var. pubescens	49	1
western trillium	Trillium ovatum	47	1
spreading woodfern	Dryopteris expansa	42	1
vanillaleaf	Achlys triphylla	36	3
twinkflower	Linnaea borealis ssp. longiflora	31	3
inside-out flower	Vancouveria hexandra	29	5
threeleaf foamflower	Tiarella trifoliata var. trifoliata	29	1

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Chris Chappell photo



Plot locations
of PSME-TSHE/MANE/POMU
in the Puget Trough

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Red alder may regenerate abundantly after disturbance if a seed source is present and mineral soil is exposed. Alder will typically die out after 80-100 years.

VEGETATION: This is a forest where Douglas-fir tends to dominate the uppermost canopy layer. Western hemlock or western redcedar often co-dominate the canopy with Douglas-fir or dominate tree regeneration. Bigleaf maple often forms a prominent to co-dominant lower canopy layer. Sword fern and dwarf Oregongrape usually co-dominate the understory. Vine maple forms a prominent to co-dominant tall shrub layer on about half the plots. Red huckleberry, trailing blackberry, salal, sweet-scented bedstraw, and western starflower are frequent. Inside-out flower is present to prominent on about ¼ of plots, especially from Lewis County south.

CLASSIFICATION NOTES: Also described by Chappell (1997, 2001). NatureServe (2004) names include TSHE/POMU and PSME-TSHE/POMU: parts of each of them would be classified as this association. This association is similar to TSHE/POMU-BENE of Mount Baker-Snoqualmie National Forest (Henderson et al. 1992), and TSHE/BENE/POMU of Olympic National Forest (Henderson et al. 1989) and Gifford Pinchot National Forest (Topik et al. 1986).

MANAGEMENT NOTES: Red alder can regenerate abundantly after logging of this association. These sites appear to be relatively productive for tree growth. Non-native English ivy (*Hedera helix*) does well on these sites and if present can quickly overwhelm the native understory. Herb Robert (*Geranium robertianum*) is another threatening invasive for this association.